

AMENDMENTS TO THE CLAIMS

Please amend the claims as follows.

1-40. (Cancelled)

41. (Currently Amended) A computer implemented method for performing garbage collection in a multithreaded environment, comprising:

- obtaining a collection set of objects in a computer system, wherein the collection set is associated with a collector interval of a collection cycle;
- partitioning the collection set of objects into a plurality of sections, wherein a section of the plurality of sections is associated with a remembered set;
- partitioning the section into a plurality of segments;
- obtaining a first count-map for the section, wherein the first count-map is associated with a first thread, and wherein a first entry in the first count-map is associated with a first segment of the plurality of segments;
- identifying a first plurality of references to objects in the first segment using the remembered set;
- incrementing the first entry based on a size of the first plurality of references;
- comparing the first entry with a popular-object threshold to generate a first comparison;
- and
- evacuating a first object from the first segment based on the first comparison to reclaim memory of the computer system for reuse.

42. (Previously Presented) The computer implemented method of claim 41, further comprising:

- obtaining a second count-map for the section, wherein the second count-map is associated with a second thread, and wherein a second entry in the second count-map is associated with the first segment;
- identifying a second plurality of referenced to objects in the first segment using the remembered set;
- incrementing the second entry based on a size of the second plurality of references;
- incrementing the first entry based on the second entry before comparing the first entry with the popular-object threshold.

43. (Previously Presented) The computer implemented method of claim 41, further comprising:
obtaining a second count-map for the section, wherein the second count-map is associated with a second thread, and wherein a second entry in the second count-map is associated with a second segment of the plurality of segments;
identifying a second plurality of references to objects in the second segment using the remembered set;
incrementing the second entry based on a size of the second plurality of references;
comparing the second entry with the popular-object threshold to generate a second comparison; and
evacuating a second object from the second segment based on the second comparison to reclaim memory of the computer system for reuse.
44. (Previously Presented) The computer implemented method of claim 41, wherein evacuating the first object comprises:
adding a new section to the plurality of sections; and
placing the first object in the new section, wherein the new section is exclusively occupied by the first object.
45. (Previously Presented) The computer implemented method of claim 43, wherein evacuating the second object comprises:
adding a new section to the plurality of sections; and
placing the second object in the new section, wherein the new section is exclusively occupied by the second object.
46. (Previously Presented) The computer implemented method of claim 41, wherein the popular-object threshold is an individual-map threshold.
47. (Previously Presented) The computer implemented method of claim 42, wherein the popular-object threshold is a multiple-map threshold.
48. (Previously Presented) The computer implemented method of claim 41, wherein at least one of the plurality of segments is smaller than a minimum object size.

49. (Currently Amended) A computer readable medium storing instructions for performing garbage collection in a multithreaded environment, the instructions comprising functionality to:

- obtain a collection set of objects in a computer system, wherein the collection set is associated with a collector interval of a collection cycle;
- partition the collection set of objects into a plurality of sections, wherein a section of the plurality of sections is associated with a remembered set;
- partition the section into a plurality of segments;
- obtain a first count-map for the section, wherein the first count-map is associated with a first thread, and wherein a first entry in the first count-map is associated with a first segment of the plurality of segments;
- identify a first plurality of references to objects in the first segment using the remembered set;
- increment the first entry based on a size of the first plurality of references;
- compare the first entry with a popular-object threshold to generate a first comparison;
- and
- evacuate a first object from the first segment based on the first comparison to reclaim memory of the computer system for reuse.

50. (Previously Presented) The computer readable medium of claim 49, the instructions further comprising functionality to:

- obtain a second count-map for the section, wherein the second count-map is associated with a second thread, and wherein a second entry in the second count-map is associated with the first segment;
- identify a second plurality of referenced to objects in the first segment using the remembered set;
- increment the second entry based on a size of the second plurality of references;
- increment the first entry based on the second entry before comparing the first entry with the popular-object threshold.

51. (Previously Presented) The computer readable medium of claim 49, the instructions further comprising functionality to:
- obtain a second count-map for the section, wherein the second count-map is associated with a second thread, and wherein a second entry in the second count-map is associated with a second segment of the plurality of segments;
 - identify a second plurality of references to objects in the second segment using the remembered set;
 - increment the second entry based on a size of the second plurality of references;
 - compare the second entry with the popular-object threshold to generate a second comparison; and
 - evacuate a second object from the second segment based on the second comparison to reclaim memory of the computer system for reuse.
52. (Previously Presented) The computer readable medium of claim 49, wherein the instructions for evacuating the first object comprise functionality to:
- add a new section to the plurality of sections; and
 - place the first object in the new section, wherein the new section is exclusively occupied by the first object.
53. (Previously Presented) The computer readable medium of claim 51, wherein the instructions for evacuating the second object comprise functionality to:
- add a new section to the plurality of sections; and
 - place the second object in the new section, wherein the new section is exclusively occupied by the second object.
54. (Previously Presented) The computer readable medium of claim 49, wherein the popular-object threshold is an individual-map threshold.
55. (Previously Presented) The computer readable medium of claim 49, wherein the popular-object threshold is a multiple-map threshold.
56. (Previously Presented) The computer readable medium of claim 49, wherein at least one of the plurality of segments is smaller than a minimum object size.

57. (Currently Amended) An apparatus for performing garbage collection a multithreaded environment, comprising:

a first means for obtaining a collection set of objects in a computer system, wherein the collection set is associated with a collector interval of a collection cycle;

a second means for partitioning the collection set of objects into a plurality of sections, wherein a section of the plurality of sections is associated with a remembered set;

a third means for partitioning the section into a plurality of segments;

a fourth means for obtaining a count-map for the section, wherein the count-map is associated with a thread, and wherein an entry in the count-map is associated with a segment of the plurality of segments;

a fifth means for identifying a plurality of references to objects in the segment using the remembered set;

a sixth means for incrementing the entry based on a size of the plurality of references;

a seventh means for comparing the entry with a popular-object threshold to generate a comparison; and

an eighth means for evacuating an object from the segment based on the comparison to reclaim memory of the computer system for reuse;

wherein a portion of at least one selected from a group consisting of the first means, the second means, the third means, the fourth means, the fifth means, the sixth means, the seventh means, and the eighth means comprises a hardware processor.